



CWSF 2014 - Windsor, Ontario



Cassey Deveau

The Friendly Fire-Retardant

Challenge: Environment

Category: Senior Region: Strait

City: Belle Cote, NS

School: Cape Breton Highlands Academy-Education Centre

Abstract: I planned to test different concentrations of alginate solutions to try and

create a non-toxic, biodegradable, human and environmentally friendly flame retardant. I calculated the combustion energy released for trials with varying concentrations of the solution and found that the alginate solution did lower the energy released, therefor acting as a possible alternative to

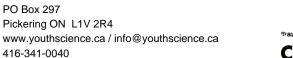
the current toxic flame-retardants.

Biography

I am extremely interested in being well involved in my school and community. I take part in the Cross Country, Volleyball, Basketball, Table Tennis, and Softball teams as well as many clubs and committees at school. I volunteer in the community with young girls, at the church hall, and through peer tutoring. I spend a lot of my time planning events as the president of my student council, or playing guitar and piano. I was inspired when I came across two articles that caught my attention. One described hazardous chemicals from North American flame-retardants, that were found in animals, and pregnant women in the Artic who had never been exposed to them. Researchers believed that after house fires the jet stream carries the toxic smoke to other areas of the world. The second was an article from a Chinese journal that described the testing of calcium alginate fibers in fire-fighter suits to increase the flame retardancy. I would like to further the investigation by weaving fibers of alginate as it is more practical than the hardening solution. I advise other students to choose a topic that they are truly interested in as it improves the presentation of the project.

| Awards | Value |
|---|---------|
| Excellence Award - Senior - Bronze Medal | \$100 |
| Sponsor: Nuclear Waste Management Organization | |
| University of Ottawa Entrance Scholarship | \$1 000 |
| Senior Bronze Medallist - \$1000 Entrance Scholarship | |
| Sponsor: University of Ottawa | |
| Western University Scholarship | \$1 000 |
| Bronze Medallist - \$1000 Entrance Scholarship | |
| Sponsor: Western University | |
| Total | \$2 100 |





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